REMARKS

Claims 2-10, 12-15, 17-20 and 23-25 are pending in this application. Claims 8-10, 17 and 23-25 have been rejected under 35 U.S.C. 103. Claims 8, 17, 18, 23 and 25 have been amended. Claims 2, 5, 12, 13, 15, 19 and 24 have been amended or clarity. By this amendment, Claims 26-33 have been added. Claims 2-7 and 12-15 have been allowed. Claims 18-20 have been objected to. No new matter has been added. Reexamination and reconsideration are respectfully requested.

Rejection Under U.S.C. 103

Claims 8-10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki, U.S. Patent No. 6,169,240 in view of Suzuki, U.S. Patent No. 5,566,154 and further in view of Kageyama et al., U.S. Patent No. 5,412,152 and further in view of Chiba, U.S. Patent No. 5,675,709 and yet further in view of Suzuki, U.S. Patent No. 4,679,480. This rejection is respectfully traversed. However, in order to clarify embodiments of Applicant's invention over the cited art and to pass the claims to allowance at an earliest possible date, Claim 8 has been amended.

As amended, Claim 8 now recites a method for generating a compressed and expanded waveform comprising, *inter alia*, "receiving a plurality of mark addresses that designate a starting point at delimiting locations of waveform segments of a frequency band-divided waveform; . . . reading out portions of at least one waveform segment at the read-out speed at every time point of the frequency band-divided waveform, the portions of at least one waveform segment comprising waveform data starting at the mark address associated with the waveform segment corresponding to the time point and ending with a mark address corresponding to a subsequent time point; and sequencing consecutive portions of at least one waveform segment to generate a processed waveform from the frequency band-divided waveform." These features are not disclosed or suggested in the cited references.

The Examiner has acknowledged that the Suzuki '240 patent is "silent on the issue of zero-crossing parameters" and cites Chiba with respect to zero-crossings, stating that Chiba "reads on the feature of mark addresses that designate a starting point at zero-crossings of waveform segments" (citing column 15, lines 4-18 and Fig. 13, item 111 of the Chiba patent).

However, Chiba discloses zero-crossings as a means of determining the frequency of a signal, as a means of determining the center value of the frequency and as a means to indicate a sound segment or no sound segment (Chiba, col. 15, ll. 6-8). Thus, the focus of Chiba is the *beginning* of each sound segment; Chiba does not address and, indeed, has no reason to be concerned with, the *end* of a sound segment. In general, Chiba is directed toward a sound processing system that analyzes sound data to obtain a physical feature quantity of a sound signal (Chiba, Abstract). Chiba fails to disclose or suggest reading waveform segments from memory and sequencing the waveform segments and neither Chiba nor Suzuki disclose or suggest starting at the mark address associated with the waveform segment corresponding to the time point and ending with a mark address corresponding to a subsequent time point when reading waveform segments from memory.

Accordingly, even if Chiba is combined with the Suzuki patents, as suggested by the Examiner, the combination would not result in the invention recited in claim 8. Because none of the cited references teaches or suggests the features recited in amended Claim 8, the combination of the cited references suggested by the Examiner would not teach or suggest such features. Accordingly, a *prima facie* case of obviousness has not been established with respect to this claim. Thus, Claim 8 cannot be obvious over the art cited by the Examiner. In addition, at least due to their dependency on Claim 8, Claims 9 and 10 are also patentably distinguished over the art of record.

In addition, Claims 26 and 27 have been added. No new matter has been added. Claims 26 and 27 depend directly from Claim 8 and are believed to be allowable for at least the same reasons as Claim 8.

Claim 17 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki '240 in view of Suzuki '154 and further in view of Kageyama et al., and yet further in view of Suzuki '478. This rejection is respectfully traversed. However, in order to clarify embodiments of Applicant's invention over the cited art and to pass the claims to allowance at an earliest possible date, Claim 17 has been amended.

As amended, Claim 17 is directed to a method for generating a compressed and expanded waveform comprising, *inter alia*, "receiving a plurality of mark addresses that designate a

starting point at delimiting locations of waveform segments of a frequency band-divided waveform; reading out portions of at least one waveform segment at the read-out speed at every time point of the frequency band-divided waveform, the portions of at least one waveform segment comprising waveform data starting at the mark address associated with the waveform segment corresponding to the time point and ending with a mark address corresponding to a subsequent time point; and sequencing consecutive portions of at least one waveform segment to generate a processed waveform from the frequency band-divided waveform." These features are not disclosed or suggested in the cited references.

As stated above, the Examiner has acknowledged that the Suzuki '240 patent is "silent on the issue of zero-crossing parameters." The Examiner has not cited Chiba in the rejection of Claim 17 but, assuming *arguendo* that the Examiner had cited Chiba in the same way as the rejection of Claim 8, the Examiner would cite Chiba with respect to zero-crossings, stating that Chiba "reads on the feature of mark addresses that designate a starting point at zero-crossings of waveform segments" (citing column 15, lines 4-18 and Fig. 13, item 111 of the Chiba patent). However, for the reasons discussed above, Chiba does not disclose or suggest starting at the mark address associated with the waveform segment corresponding to the time point and ending with a mark address corresponding to a subsequent time point when reading waveform segments from memory.

Accordingly, even if Chiba is combined with the Suzuki and Kageyama et al. patents, the combination would not result in the invention recited in claim 17.

Moreover, as has been stated previously, the Examiner argues that it would have been obvious to combine Suzuki '240 and Suzuki '154 to address the fact that Suzuki '240 does not mention filtering, as claimed. However, the system described in the Suzuki '240 patent is quite different (and performs a different function) than the system described in the Suzuki '154 patent. First, it should be recognized that, while the first named inventors in those two patents have the same last name ("Suzuki"), they are not the same person and the two patents are assigned to different entities. The two patents are directed to two different systems that perform distinctly different functions. Without the present disclosure as guide, one of ordinary skill in the art would not have found it obvious to pick and choose certain process steps or elements from the

Suzuki '154 system and apply them to the Suzuki '240 system, as such steps and elements would have no similar purpose in the Suzuki '240 system.

More specifically, the Suzuki '240 patent describes a tone generating device that allows the user to time stretch or compress data being read out to change the expression of the generated tone without changing the pitch. (See, e.g., the Abstract, lines 13-18 of the Suzuki '240 patent). On the other hand, the Suzuki '154 patent describes a process for compressing a digital signal to record data on an optical disc or to transmit data in compressed form. When reading out from the optical disc, the Suzuki '154 patent system simply reads and de-compresses the stored signal. Suzuki '154 provides no stretching or compressing on a time axis to change expression or any sound quality of the signal during read out, as describe by Suzuki '240. The compression used by Suzuki '154 is for storing or transmitting the data in compressed form, not for changing a sound quality of the data. Thus, any filtering performed by Suzuki '154 would not have application to the stretching or compressing data on a time axis to change or enhance the sound produced by the data. Thus, there would be no reason or motivation to employ any such filtering in the Suzuki '240 system. There would be no reason or motivation to employ certain steps performed in an optical data compression technique for optical storage or transmission as described by Suzuki '154 with the tone generating device described by Suzuki '240.

Because none of the cited references teaches or suggests the features recited in amended Claim 17, the combination of the cited references suggested by the Examiner would not teach or suggest such features. Accordingly, a *prima facie* case of obviousness has not been established with respect to this claim. Thus, Claim 17 cannot be obvious over the art cited by the Examiner.

In addition, Claims 32 and 33 have been added. No new matter has been added. Claims 32 and 33 depend directly from Claim 17 and are believed to be allowable for at least the same reasons as Claim 17.

Claims 23-25 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki '240 in view of Kageyama et al. These rejections are respectfully traversed. However, in order to clarify embodiments of Applicant's invention over the cited art and to pass the claims to allowance at an earliest possible date, Claims 23 and 25 have been amended. No new matter has been added.

As amended, Claim 23 recites a waveform compression and expansion apparatus comprising, *inter alia*, "compression and expansion means with which the plurality of frequency band-divided waveforms are apportioned to at least two kinds of formats during compression and at least two kinds of formats during expansion." This feature is not disclosed or suggested in Suzuki '240 in view of Kageyama et al. Claim 25 recites similar language.

While the Examiner has cited Suzuki '240 at column 68, lines 16-18 as reading on the feature of a compression and expansion means with which the plurality of frequency band-divided waveforms are apportioned to at least two kinds of compression and expansion formats, Applicant respectfully notes that in Suzuki '240, a *single*, distinct process, i.e., either a compression process, a stretching process, or a normal process, is selected based on the accumulated difference between an ideal location (virtual read address) and an actual location (actual read address) in a reproduction address (Suzuki '240, col. 61, ll. 57-59). In other words, only one process is chosen for data manipulation in Suzuki '240, either a *single* compression process, a *single* expansion process, or a *single* normal process, depending on the difference of the ideal location to the reproduction location.

In contrast, in amended Claims 23 and 25, regardless of whether waveform data is being compressed or expanded, frequency band-divided waveforms are subject to *at least two* kinds of formats during compression and *at least two kinds* of formats during expansion. Suzuki does not disclose or suggest a compression and expansion means of this type.

Moreover, Kageyama et al. is directed toward the control of frequency and magnitude of waveform data and resulting tone via analysis of frequency and magnitude of tone spectra. Kageyama et al. does not address compression and expansion and, accordingly, does not disclose or suggest a waveform compression and expansion apparatus comprising, *inter alia*, compression and expansion means with which the plurality of frequency band-divided waveforms are apportioned to at least two kinds of formats during compression and at least two kinds of formats during expansion as recited in Claim 23, or the similar language recited in Claim 25.

Because none of the cited references teaches or suggests the features recited in amended Claims 23 and 25, the combination of the cited references suggested by the Examiner would not teach or suggest such features. Accordingly, a *prima facie* case of obviousness has not been established with respect to these claims. Thus, Claims 23 and 25 cannot be obvious over the art

cited by the Examiner. Similarly, Claim 24, which depends directly from Claim 23, is also not obvious over the art cited by the Examiner.

In addition, Claims 28-31 have been added. No new matter has been added. Claims 28-29 and Claims 31-32 depend directly from Claims 23 and 25, respectively, and are believed to be allowable for at least the same reasons as Claim 23 and 25.

Allowable Subject Matter

Applicant gratefully acknowledges the Examiner's recognition of allowable subject matter in Claims 18-20 and the Examiner's allowance of Claims 2-7 and 12-15. Claim 18 has been amended and is now in independent form and, thus, in condition for allowance.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-0872. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-0872.

Respectfully submitted,

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